

# Exhibit 3

## **Analysis of Rives' and Alford's Rebuttal Reports**

Rebuttal Expert Report of David Ely

Pursuant to 28 U.S.C. sec. 1746, I declare the following:

In their rebuttal reports, Defendants' experts Rives and Alford raised several objections to the methodologies used in my report to create an illustrative district for an eight member Irving City Council with a single member district configuration ("Illustrative District"). I address only their primary objections below. I have not examined the underlying data used by Defendants' experts because it has not been provided to me. When I receive that data and other documents relevant to my analysis, I may supplement this report as appropriate.

### **I. Tract vs. Block Group Citizenship Rates**

Defendants' experts object to my use of Census Tract level citizenship rates. I chose to use citizenship data from Summary File 4 ("SF4") rather than "Special Tabulation 76 – Kim Brace, Election Data Services" ("STP76") because SF4 is a standard census product and more comparable to the American Community Survey ("ACS") data, and because the STP76 data is subject to rounding rather than suppression to protect privacy. SF4 data is subject to suppression when there are fewer than 100 persons in a given category to protect the privacy of census respondents. SF4 data is also suppressed for geographic areas with fewer than 50 samples, in order to maintain a minimum statistical reliability, and is not reported below the census tract level. All Census Tracts used in my analysis met these thresholds.

STP76, on the other hand, has all values rounded to 0, 3, or a multiple of 5 for privacy reasons, and has no minimum sample size. A citizenship rate for Hispanics within each Block Group must be computed from two independently rounded numbers, the Hispanic citizen voting age count and the total Hispanic voting age count. The potential errors introduced by computing a percentage from two rounded numbers are more pronounced at the Block Group level than at the larger Census Tract level because the raw numbers are smaller in Block Groups. Since there is no single non-Hispanic category reported in STP76, a citizenship rate for non-Hispanics must be

computed from two numbers, each of which is the difference between two independently rounded numbers, the total citizen voting age count minus the Hispanic citizen voting age count and the total voting age count minus the Hispanic voting age count. Again, the potential error introduced is greater at the Block Group level than at the Census Tract level when this type of computation is performed.

Similarly, the small sample size found at the Block Group level increases the likelihood of sampling error. In contrast to his concern for error rates in the citywide data, Dr. Rives provides no margin of error or confidence interval analysis to demonstrate that, as he claims, the difference in citizenship rates among Block Groups is statistically significant or to support his arguments that the Block Group data is more reliable and the analysis based on Census Tract data is biased.

## **II. Point Estimates vs. Confidence Intervals**

Both Dr. Rives and Dr. Alford suggest that an application of a 90% confidence interval<sup>1</sup> is necessary in order to show a Hispanic citizen voting age population (“CVAP”) majority in the Illustrative District. Specifically, they argue that a 90% confidence interval for the citizenship estimate must lie entirely above 50% in order to justify rejecting the “null hypothesis” that there is not a Hispanic CVAP majority in the Illustrative District. One could just as easily argue that the interval must lie entirely below 50% to allow one to reject the null hypothesis that there is a Hispanic majority of the CVAP. Dr. Rives and Dr. Alford improperly interpret the 90% confidence interval to create an artificially high citizenship requirement. In contrast, an appropriate use of the 90% confidence interval would compare the 37% Hispanic share of CVAP that I calculated from the 2000 Census with the 45.9% lower limit of the 90% confidence interval calculated by Dr. Rives. Such a comparison would allow one to reject the null hypothesis that the 2000 Census provides an accurate measure of current Hispanic share of CVAP. Therefore, a point estimate above 50% that is based on more current data is the

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<sup>1</sup> When a statistic is calculated for a sample population, the 90% confidence interval is the range of values with a 90% probability of containing the true value of that statistic for the entire population.

appropriate benchmark for current Hispanic share of CVAP in the Illustrative District. In my opinion, my point estimate of 50.1% is the most probable and reliable single estimate of current Hispanic CVAP share based on available data.

### **III. The Illustrative District is not a Maximum Hispanic CVAP District.**

Defendants' experts imply that the Illustrative District reflects the maximum possible Hispanic concentration. That is not correct. The Illustrative District is a realistic and reasonably compact district, which I believe meets the Gingles first prong requirements. By way of illustration, it would have been possible to create a district with a substantially greater Hispanic share of CVAP than that of my Illustrative District. There are significant concentrations of Hispanic population near the Illustrative District that could be connected to each other through low population corridors. Indeed, a maximized district that ignored all compactness considerations but maintained contiguity and ideal population would have the following characteristics:

- 75% Hispanic Population (2000 Census)
- 71.9% Hispanic Voting Age Population (2000 Census)
- 45.6% Hispanic CVAP (2000 Estimate)
- 60.8% Hispanic CVAP (2008 Estimate)

From the maximum Hispanic CVAP district described above, one could form alternative illustrative districts more compact than the maximum Hispanic CVAP district, with a higher Hispanic CVAP share than the 50.1% in the Illustrative District described in my initial report.

### **IV. Growth Rates vs. New Development**

Dr. Rives argues that it is unlikely that citywide CVAP growth rates are applicable to the Illustrative District based on his understanding of the pattern of new development in the city and his assumption that population growth occurs predominately in areas with new housing

development. This analysis inaccurately treats CVAP growth as equivalent to population growth and ignores the demographic characteristic of the 2000 population that provides the most direct and basic source of CVAP growth: the aging of the citizens under 18 years of age ("CU18"). As can be seen from Table 5 in my initial report, although Hispanics comprised only 14.9% of citywide CVAP in 2000, they comprised 39.4% of the CU18. The numeric increase in Hispanic CVAP citywide from 2000 to 2006, as shown by comparing Tables 3 and 5 in my initial report, is 4868,<sup>2</sup> which is only 29% of the 2000 Hispanic CU18. Therefore the normal aging process among Hispanic CU18 from 2000 to 2006 could explain all of the Hispanic CVAP growth in the City over that six year period.

As shown in Table 6 of my initial report, Hispanics comprised 71.2% of the CU18 in the Illustrative District in 2000. The numeric increase in Hispanic CVAP from 2000 to 2008<sup>3</sup> estimated for the Illustrative District, as shown by comparing Tables 4 and 6 in my initial report, is 1323,<sup>4</sup> which is 29.2% of the 2000 CU18. Therefore the normal aging process among Hispanic CU18 from 2000 to 2008 could easily explain all of the Hispanic CVAP growth in the Illustrative District over that eight year period.

Dr. Rives states that the Illustrative District is unlikely to capture "anything like 17.8%" of the citywide growth in Hispanic CVAP. Given that the Illustrative District comprised 26.9% of the Hispanic CU18 citywide in 2000, as shown by comparing Tables 3 and 4 in my initial report,<sup>5</sup> it seems likely that 17.8% is a conservative estimate for the Illustrative District's share of the citywide growth in Hispanic CVAP.

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<sup>2</sup> Subtracting 2000 Hispanic CVAP (16,206) from 2006 Hispanic CVAP (21,074) yields an increase of 4868 for the City of Irving.

<sup>3</sup> The process of estimating the 2008 citizenship from 2000 and 2006 data is described in my initial report at paragraphs 21 and 22.

<sup>4</sup> Subtracting 2000 Hispanic CVAP (3153) from 2008 Hispanic CVAP (4476) yields an increase of 1323 for the Illustrative District.

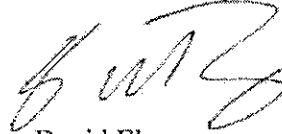
<sup>5</sup> Dividing the 2000 Hispanic CU18 for the Illustrative District (4537) by the 2000 Hispanic CU18 for the City of Irving (16,878) yields 26.9% of citywide Hispanic CU18 in the Illustrative District.

#### V. Registration Rates

Dr. Rives and Dr. Alford both argue that the relatively small number of Spanish surnamed registered voters indicates an inability to satisfy the Gingles requirements. This analysis neglects a number of critical factors present in Irving and especially in the Illustrative district that would tend to depress Hispanic registration absolutely or relative to non-Hispanic registration. Among such factors are the following:

- Low registration rates are often a result of non-representative or dilutive election systems.
- Low registration rates are often associated with younger populations. This is especially relevant here given the fact that 50% of Hispanic citizens citywide and 59% of Hispanic citizens in the Illustrative District were under age 18 in 2000.
- Low registration rates are often associated with low income populations.
- Changes in registration lag behind changes in population, as people often delay or fail to register when they become eligible to do so, because, for example, they move into an area, reach the age of 18, or become citizens. In addition, there are often delays in removing individuals from the registration rolls when they are no longer eligible to be registered in a jurisdiction because, for example, they have died or moved out of the jurisdiction.

Executed on September 8, 2008.



David Ely